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SEQUENCE LISTING

<110> Commonwealth Scientific and Industrial Research Organisation

<120> Method of Designing Agonists and Antagonists to IGF Receptor

<130> 050179-0081

<140> 09/555,275

<141> 2000-05-26

<150> PCT/AU98/00998

<151> 1998-11-27

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<151> 1998-03-25

<150> PP0585

<151> 1997-11-27

<160> 15

<170> PatentIn version 3.1

<210> 1

<211> 150

<212> PRT

<213> Homo sapiens

<400> 1

Glu Ile Cys Gly Pro Gly Ile Asp Ile Arg Asn Asp Tyr Gln Gln Leu
1 5 10 15

Lys Arg Leu Glu Asn Cys Thr Val Ile Glu Gly Tyr Leu His Ile Leu
20 25 30

Leu Ile Ser Lys Ala Glu Asp Tyr Arg Ser Tyr Arg Phe Pro Lys Leu
35 40 45

Thr Val Ile Thr Glu Tyr Leu Leu Phe Arg Val Ala Gly Leu Glu
50 55 60

Ser Leu Gly Asp Leu Phe Pro Asn Leu Thr Val Ile Arg Gly Trp Lys
65 70 75 80

Leu Phe Tyr Asn Tyr Ala Leu Val Ile Phe Glu Met Thr Asn Leu Lys
85 90 95

Asp Ile Gly Leu Tyr Asn Leu Arg Asn Ile Thr Arg Gly Ala Ile Arg
100 105 110

100 90 80 70 60 50 40 30 20 10

Ile Glu Lys Asn Ala Asp Leu Cys Tyr Leu Ser Thr Val Asp Trp Ser
115 120 125

Leu Ile Leu Asp Ala Val Ser Asn Asn Tyr Ile Val Gly Asn Lys Pro
130 135 140

Pro Lys Glu Cys Gly Asp
145 150

<210> 2
<211> 157
<212> PRT
<213> Homo sapiens

<400> 2

His Leu Tyr Pro Gly Glu Val Cys Pro Gly Met Asp Ile Arg Asn Asn
1 5 10 15

Leu Thr Arg Leu His Glu Leu Glu Asn Cys Ser Val Ile Glu Gly His
20 25 30

Leu Gln Ile Leu Leu Met Phe Lys Thr Arg Pro Glu Asp Phe Arg Asp
35 40 45

Leu Ser Phe Pro Lys Leu Ile Met Ile Thr Asp Tyr Leu Leu Leu Phe
50 55 60

Arg Val Tyr Gly Leu Glu Ser Leu Lys Asp Leu Phe Pro Asn Leu Thr
65 70 75 80

Val Ile Arg Gly Ser Arg Leu Phe Phe Asn Tyr Ala Leu Val Ile Phe
85 90 95

Glu Met Val His Leu Lys Glu Leu Gly Leu Tyr Asn Leu Met Asn Ile
100 105 110

Thr Arg Gly Ser Val Arg Ile Glu Lys Asn Asn Glu Leu Cys Tyr Leu
115 120 125

Ala Thr Ile Asp Trp Ser Arg Ile Leu Asp Ser Val Glu Asp Asn His
130 135 140

Ile Val Leu Asn Lys Asp Asp Asn Glu Glu Cys Gly Asp
145 150 155

<210> 3
<211> 165
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (15)..(24)
<223> Protein sequence known but not provided in Figure 6a

<220>
<221> MISC_FEATURE
<222> (109)..(110)
<223> Protein sequence known but not provided in Figure 6a

<400> 3

Leu Glu Glu Lys Lys Val Cys Gln Gly Thr Ser Asn Lys Leu Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Phe Leu Ser Leu Gln Arg Met Phe Asn
20 25 30

Asn Cys Glu Val Val Leu Gly Asn Leu Glu Ile Thr Tyr Val Gln Arg
35 40 45

Asn Tyr Asp Leu Ser Phe Leu Lys Thr Ile Gln Glu Val Ala Gly Tyr
50 55 60

Val Leu Ile Ala Leu Asn Thr Val Glu Arg Ile Pro Leu Glu Asn Leu
65 70 75 80

Gln Ile Ile Arg Gly Asn Met Tyr Tyr Glu Asn Ser Tyr Ala Leu Ala
85 90 95

Val Leu Ser Asn Tyr Asp Ala Asn Lys Thr Gly Leu Xaa Xaa Lys Pro
100 105 110

Met Arg Asn Leu Gln Glu Ile Leu His Gly Ala Val Arg Phe Ser Asn
115 120 125

Asn Pro Ala Leu Cys Asn Val Glu Ser Ile Gln Trp Arg Asp Ile Val
130 135 140

Ser Ser Asp Phe Leu Ser Asn Met Ser Met Asp Phe Gln Asn His Leu
145 150 155 160

Gly Ser Cys Gln Lys
165

<210> 4
<211> 167
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (11)..(17)
<223> Protein sequence known but not provided in Figure 6a

<220>
<221> MISC_FEATURE
<222> (44)..(50)
<223> Protein sequence known but not provided in Figure 6a

<400> 4

Lys Val Cys Asn Gly Ile Gly Ile Gly Glu Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Asn Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser
20 25 30

Gly Asp Leu His Ile Leu Pro Val Ala Phe Arg Xaa Xaa Xaa Xaa
35 40 45

Xaa Xaa Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val
50 55 60

Lys Glu Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg
65 70 75 80

Thr Asp Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr
85 90 95

Lys Gln His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr
100 105 110

Ser Leu Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile
115 120 125

Ile Ser Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys
130 135 140

Lys Leu Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg
145 150 155 160

Gly Glu Asn Ser Cys Lys Ala
165

<210> 5
<211> 161
<212> PRT
<213> Homo sapiens

<400> 5

Lys Val Cys His Leu Leu Glu Gly Glu Lys Thr Ile Asp Ser Val Thr
1 5 10 15

Ser Ala Gln Glu Leu Arg Gly Cys Thr Val Ile Asn Gly Ser Leu Ile
20 25 30

Ile Asn Ile Arg Gly Gly Asn Asn Leu Ala Ala Glu Leu Glu Ala Asn
35 40 45

Leu Gly Leu Ile Glu Glu Ile Ser Gly Tyr Leu Lys Ile Arg Arg Ser
50 55 60

Tyr Ala Leu Val Ser Leu Ser Phe Phe Arg Lys Leu Arg Leu Ile Arg
65 70 75 80

Gly Glu Thr Leu Glu Ile Gly Asn Tyr Ser Phe Tyr Ala Leu Asp Asn
85 90 95

Gln Asn Leu Arg Gln Leu Trp Asp Trp Ser Lys His Asn Leu Thr Ile
100 105 110

Thr Gln Gly Lys Leu Phe Phe His Tyr Asn Pro Lys Leu Cys Leu Ser
115 120 125

Glu Ile His Lys Met Glu Glu Val Ser Gly Thr Lys Gly Arg Gln Glu
130 135 140

Arg Asn Asp Ile Ala Leu Lys Thr Asn Gly Asp Lys Ala Ser Cys Glu
145 150 155 160

Asn

<210> 6
<211> 161
<212> PRT
<213> Homo sapiens

<400> 6

Lys Val Cys Glu Glu Glu Lys Lys Thr Lys Thr Ile Asp Ser Val Thr
1 5 10 15

Ser Ala Gln Met Leu Gln Gly Cys Thr Ile Phe Lys Gly Asn Leu Leu
20 25 30

Ile Asn Ile Arg Arg Gly Asn Asn Ile Ala Ser Glu Leu Glu Asn Phe
35 40 45

Met Gly Leu Ile Glu Val Val Thr Gly Tyr Val Lys Ile Arg His Ser
50 55 60

His Ala Leu Val Ser Leu Ser Phe Leu Lys Asn Leu Arg Leu Ile Leu
65 70 75 80

Gly Glu Glu Gln Leu Glu Gly Asn Tyr Ser Phe Tyr Val Leu Asp Asn
85 90 95

Gln Asn Leu Gln Gln Leu Trp Asp Trp Asp His Arg Asn Leu Thr Ile
100 105 110

Lys Ala Gly Lys Met Tyr Phe Ala Phe Asn Pro Lys Leu Cys Val Ser
115 120 125

Glu Ile Tyr Arg Met Glu Glu Val Thr Gly Thr Lys Gly Arg Gln Ser
130 135 140

Lys Gly Asp Ile Asn Thr Arg Asn Asn Gly Glu Arg Ala Ser Cys Glu
145 150 155 160

Ser

<210> 7
<211> 150
<212> PRT
<213> Homo sapiens

<400> 7

Asp Leu Cys Pro Gly Thr Met Glu Glu Lys Pro Met Cys Glu Lys Thr
1 5 10 15

Thr Ile Asn Asn Glu Tyr Asn Tyr Arg Cys Trp Thr Thr Asn Arg Cys
20 25 30

Gln Lys Met Cys Pro Ser Thr Cys Gly Lys Arg Ala Cys Thr Glu Asn
35 40 45

Asn Glu Cys Cys His Pro Glu Cys Leu Gly Ser Cys Ser Ala Pro Asp
50 55 60

Asn Asp Thr Ala Cys Val Ala Cys Arg His Tyr Tyr Tyr Ala Gly Val
65 70 75 80

Cys Val Pro Ala Cys Pro Pro Asn Thr Tyr Arg Phe Glu Gly Trp Arg
85 90 95

Cys Val Asp Arg Asp Phe Cys Ala Asn Ile Leu Ser Ala Glu Ser Ser
100 105 110

Asp Ser Glu Gly Phe Val Ile His Asp Gly Glu Cys Met Gln Glu Cys
115 120 125

Pro Ser Gly Phe Ile Arg Asn Gly Ser Gln Ser Met Tyr Cys Ile Pro
130 135 140

Cys Glu Gly Pro Cys Pro
145 150

<210> 8
<211> 153
<212> PRT
<213> Homo sapiens

<400> 8

Asp Ile Cys Pro Gly Thr Ala Lys Gly Lys Thr Asn Cys Pro Ala Thr
1 5 10 15

Val Ile Asn Gly Gln Phe Val Glu Arg Cys Trp Thr His Ser His Cys
20 25 30

Gln Lys Val Cys Pro Thr Ile Cys Lys Ser His Gly Cys Thr Ala Glu
35 40 45

Gly Leu Cys Cys His Ser Glu Cys Leu Gly Asn Cys Ser Gln Pro Asp
50 55 60

Asp Pro Thr Lys Cys Val Ala Cys Arg Asn Phe Tyr Leu Asp Gly Arg
65 70 75 80

Cys Val Glu Thr Cys Pro Pro Tyr Tyr His Phe Gln Asp Trp Arg
85 90 95

Cys Val Asn Phe Ser Phe Cys Gln Asp Leu His His Lys Cys Lys Asn
100 105 110

Ser Arg Arg Gln Gly Cys His Gln Tyr Val Ile His Asn Asn Lys Cys
115 120 125

Ile Pro Glu Cys Pro Ser Gly Tyr Thr Met Asn Ser Ser Asn Leu Leu
130 135 140

Cys Thr Pro Cys Leu Gly Pro Cys Pro
145 150

<210> 9
<211> 146
<212> PRT
<213> Homo sapiens

<400> 9

Lys Cys Asp Pro Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu
1 5 10 15

Glu Asn Cys Gln Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser
20 25 30

Gly Arg Cys Arg Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys

35

40

45

Ala Ala Gly Cys Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg
50 55 60

Lys Phe Arg Asp Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met
65 70 75 80

Leu Tyr Asn Pro Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys
85 90 95

Tyr Ser Phe Gly Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val
100 105 110

Val Thr Asp His Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr
115 120 125

Glu Met Glu Glu Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly Pro
130 135 140

Cys Arg
145

<210> 10
<211> 142
<212> PRT
<213> Homo sapiens
<400> 10

Gln Val Cys His Ala Leu Cys Ser Pro Glu Gly Cys Trp Gly Pro Glu
1 5 10 15

Pro Arg Asp Cys Val Ser Cys Arg Asn Val Ser Arg Gly Arg Glu Cys
20 25 30

Val Asp Lys Cys Lys Leu Leu Glu Gly Glu Pro Arg Glu Phe Val Glu
35 40 45

Asn Ser Glu Cys Ile Gln Cys His Pro Glu Cys Leu Pro Gln Ala Met
50 55 60

Asn Ile Thr Cys Thr Gly Arg Gly Pro Asp Asn Cys Ile Gln Cys Ala
65 70 75 80

His Tyr Ile Asp Gly Pro His Cys Val Lys Thr Cys Pro Ala Gly Val
85 90 95

Met Gly Glu Asn Asn Thr Leu Val Trp Lys Tyr Ala Asp Ala Gly His
100 105 110

Val Cys His Leu Cys His Pro Asn Cys Thr Tyr Gly Cys Thr Gly Pro
115 120 125

Gly Leu Glu Gly Cys Pro Thr Asn Gly Pro Lys Ile Pro Ser
130 135 140

<210> 11

<211> 906

<212> PRT

<213> Homo sapiens

<400> 11

Glu Ile Cys Gly Pro Gly Ile Asp Ile Arg Asn Asp Tyr Gln Gln Leu
1 5 10 15

Lys Arg Leu Glu Asn Cys Thr Val Ile Glu Gly Tyr Leu His Ile Leu
20 25 30

Leu Ile Ser Lys Ala Glu Asp Tyr Arg Ser Tyr Arg Phe Pro Lys Leu
35 40 45

Thr Val Ile Thr Glu Tyr Leu Leu Leu Phe Arg Val Ala Gly Leu Glu
50 55 60

Ser Leu Gly Asp Leu Phe Pro Asn Leu Thr Val Ile Arg Gly Trp Lys
65 70 75 80

Leu Phe Tyr Asn Tyr Ala Leu Val Ile Phe Glu Met Thr Asn Leu Lys
85 90 95

Asp Ile Gly Leu Tyr Asn Leu Arg Asn Ile Thr Arg Gly Ala Ile Arg
100 105 110

Ile Glu Lys Asn Ala Asp Leu Cys Tyr Leu Ser Thr Val Asp Trp Ser
115 120 125

Leu Ile Leu Asp Ala Val Ser Asn Asn Tyr Ile Val Gly Asn Lys Pro

130

135

140

Pro Lys Glu Cys Gly Asp Leu Cys Pro Gly Thr Met Glu Glu Lys Pro
145 150 155 160

Met Cys Glu Lys Thr Thr Ile Asn Asn Glu Tyr Asn Tyr Arg Cys Trp
165 170 175

Thr Thr Asn Arg Cys Gln Lys Met Cys Pro Ser Thr Cys Gly Lys Arg
180 185 190

Ala Cys Thr Glu Asn Asn Glu Cys Cys His Pro Glu Cys Leu Gly Ser
195 200 205

Cys Ser Ala Pro Asp Asn Asp Thr Ala Cys Val Ala Cys Arg His Tyr
210 215 220

Tyr Tyr Ala Gly Val Cys Val Pro Ala Cys Pro Pro Asn Thr Tyr Arg
225 230 235 240

Phe Glu Gly Trp Arg Cys Val Asp Arg Asp Phe Cys Ala Asn Ile Leu
245 250 255

Ser Ala Glu Ser Ser Asp Ser Glu Gly Phe Val Ile His Asp Gly Glu
260 265 270

Cys Met Gln Glu Cys Pro Ser Gly Phe Ile Arg Asn Gly Ser Gln Ser
275 280 285

Met Tyr Cys Ile Pro Cys Glu Gly Pro Cys Pro Lys Val Cys Glu Glu
290 295 300

Glu Lys Lys Thr Lys Thr Ile Asp Ser Val Thr Ser Ala Gln Met Leu
305 310 315 320

Gln Gly Cys Thr Ile Phe Lys Gly Asn Leu Leu Ile Asn Ile Arg Arg
325 330 335

Gly Asn Asn Ile Ala Ser Glu Leu Glu Asn Phe Met Gly Leu Ile Glu
340 345 350

Val Val Thr Gly Tyr Val Lys Ile Arg His Ser His Ala Leu Val Ser
355 360 365

Leu Ser Phe Leu Lys Asn Leu Arg Leu Ile Leu Gly Glu Gln Leu
370 375 380

Glu Gly Asn Tyr Ser Phe Tyr Val Leu Asp Asn Gln Asn Leu Gln Gln
385 390 395 400

Leu Trp Asp Trp Asp His Arg Asn Leu Thr Ile Lys Ala Gly Lys Met
405 410 415

Tyr Phe Ala Phe Asn Pro Lys Leu Cys Val Ser Glu Ile Tyr Arg Met
420 425 430

Glu Glu Val Thr Gly Thr Lys Gly Arg Gln Ser Lys Gly Asp Ile Asn
435 440 445

Thr Arg Asn Asn Gly Glu Arg Ala Ser Cys Glu Ser Asp Val Leu His
450 455 460

Phe Thr Ser Thr Thr Ser Lys Asn Arg Ile Ile Ile Thr Trp His
465 470 475 480

Arg Tyr Arg Pro Pro Asp Tyr Arg Asp Leu Ile Ser Phe Thr Val Tyr
485 490 495

Tyr Lys Glu Ala Pro Phe Lys Asn Val Thr Glu Tyr Asp Gly Gln Asp
500 505 510

Ala Cys Gly Ser Asn Ser Trp Asn Met Val Asp Val Asp Leu Pro Pro
515 520 525

Asn Lys Asp Val Glu Pro Gly Ile Leu Leu His Gly Leu Lys Pro Trp
530 535 540

Thr Gln Tyr Ala Val Tyr Val Lys Ala Val Thr Leu Thr Met Val Glu
545 550 555 560

Asn Asp His Ile Arg Gly Ala Lys Ser Glu Ile Leu Tyr Ile Arg Thr
565 570 575

Asn Ala Ser Val Pro Ser Ile Pro Leu Asp Val Leu Ser Ala Ser Asn
580 585 590

Ser Ser Ser Gln Leu Ile Val Lys Trp Asn Pro Pro Ser Leu Pro Asn
595 600 605

Gly Asn Leu Ser Tyr Tyr Ile Val Arg Trp Gln Arg Gln Pro Gln Asp
610 615 620

Gly Tyr Leu Tyr Arg His Asn Tyr Cys Ser Lys Asp Lys Ile Pro Ile
625 630 635 640

Arg Lys Tyr Ala Asp Gly Thr Ile Asp Ile Glu Glu Val Thr Glu Asn
645 650 655

Pro Lys Thr Glu Val Cys Gly Gly Glu Lys Gly Pro Cys Cys Ala Cys
660 665 670

Pro Lys Thr Glu Ala Glu Lys Gln Ala Glu Lys Glu Glu Ala Glu Tyr
675 680 685

Arg Lys Val Phe Glu Asn Phe Leu His Asn Ser Ile Phe Val Pro Arg
690 695 700

Pro Glu Arg Lys Arg Arg Asp Val Met Gln Val Ala Asn Thr Thr Met
705 710 715 720

Ser Ser Arg Ser Arg Asn Thr Thr Ala Ala Asp Thr Tyr Asn Ile Thr
725 730 735

Asp Pro Glu Glu Leu Glu Thr Glu Tyr Pro Phe Phe Glu Ser Arg Val
740 745 750

Asp Asn Lys Glu Arg Thr Val Ile Ser Asn Leu Arg Pro Phe Thr Leu
755 760 765

Tyr Arg Ile Asp Ile His Ser Cys Asn His Glu Ala Glu Lys Leu Gly
770 775 780

Cys Ser Ala Ser Asn Phe Val Phe Ala Arg Thr Met Pro Ala Glu Gly
785 790 795 800

Ala Asp Asp Ile Pro Gly Pro Val Thr Trp Glu Pro Arg Pro Glu Asn
805 810 815

Ser Ile Phe Leu Lys Trp Pro Glu Pro Glu Asn Pro Asn Gly Leu Ile
820 825 830

Leu Met Tyr Glu Ile Lys Tyr Gly Ser Gln Val Glu Asp Gln Arg Glu
835 840 845

Cys Val Ser Arg Gln Glu Tyr Arg Lys Tyr Gly Gly Ala Lys Leu Asn
850 855 860

Arg Leu Asn Pro Gly Asn Tyr Thr Ala Arg Ile Gln Ala Thr Ser Leu
865 870 875 880

Ser Gly Asn Gly Ser Trp Thr Asp Pro Val Phe Phe Tyr Val Gln Ala
885 890 895

Lys Thr Gly Tyr Glu Asn Phe Ile His Leu
900 905

<210> 12
<211> 916
<212> PRT
<213> Homo sapiens

<400> 12

His Leu Tyr Pro Gly Glu Val Cys Pro Gly Met Asp Ile Arg Asn Asn
1 5 10 15

Leu Thr Arg Leu His Glu Leu Glu Asn Cys Ser Val Ile Glu Gly His
20 25 30

Leu Gln Ile Leu Leu Met Phe Lys Thr Arg Pro Glu Asp Phe Arg Asp
35 40 45

Leu Ser Phe Pro Lys Leu Ile Met Ile Thr Asp Tyr Leu Leu Leu Phe
50 55 60

Arg Val Tyr Gly Leu Glu Ser Leu Lys Asp Leu Phe Pro Asn Leu Thr
65 70 75 80

Val Ile Arg Gly Ser Arg Leu Phe Phe Asn Tyr Ala Leu Val Ile Phe
85 90 95

Glu Met Val His Leu Lys Glu Leu Gly Leu Tyr Asn Leu Met Asn Ile
100 105 110

09552200
Thr Arg Gly Ser Val Arg Ile Glu Lys Asn Asn Glu Leu Cys Tyr Leu
115 120 125

Ala Thr Ile Asp Trp Ser Arg Ile Leu Asp Ser Val Glu Asp Asn Tyr
130 135 140

Ile Val Leu Asn Asp Asp Asn Glu Glu Cys Gly Asp Ile Cys Pro Gly
145 150 155 160

Thr Ala Lys Gly Lys Thr Asn Cys Pro Ala Thr Val Ile Asn Gly Gln
165 170 175

Phe Val Glu Arg Cys Trp Thr His Ser His Cys Gln Lys Val Cys Pro
180 185 190

Thr Ile Cys Lys Ser His Gly Cys Thr Ala Glu Gly Leu Cys Cys His
195 200 205

Ser Glu Cys Leu Gly Asn Cys Ser Gln Pro Asp Asp Pro Thr Lys Cys
210 215 220

Val Ala Cys Arg Asn Phe Tyr Leu Asp Gly Arg Cys Val Glu Thr Cys
225 230 235 240

Pro Pro Pro Tyr Tyr His Phe Gln Asp Trp Arg Cys Val Asn Phe Ser
245 250 255

Phe Cys Gln Asp Leu His His Lys Cys Lys Asn Ser Arg Arg Gln Gly
260 265 270

Cys His Gln Tyr Val Ile His Asn Asn Lys Cys Ile Pro Glu Cys Pro
275 280 285

Ser Gly Tyr Thr Met Asn Ser Ser Asn Leu Leu Cys Thr Pro Cys Leu
290 295 300

Gly Pro Cys Pro Lys Val Cys His Leu Leu Glu Gly Glu Lys Thr Ile
305 310 315 320

Asp Ser Val Thr Ser Ala Gln Glu Leu Arg Gly Cys Thr Val Ile Asn
325 330 335

Gly Ser Leu Ile Ile Asn Ile Arg Gly Gly Asn Asn Leu Ala Ala Glu
340 345 350

Leu Glu Ala Asn Leu Gly Leu Ile Glu Glu Ile Ser Gly Tyr Leu Lys
355 360 365

Ile Arg Arg Ser Tyr Ala Leu Val Ser Leu Ser Phe Phe Arg Lys Leu
370 375 380

Arg Leu Ile Arg Gly Glu Thr Leu Glu Ile Gly Asn Tyr Ser Phe Tyr
385 390 395 400

Ala Leu Asp Asn Gln Asn Leu Arg Gln Leu Trp Asp Trp Ser Lys His
405 410 415

Asn Leu Thr Ile Thr Gln Gly Lys Leu Phe Phe His Tyr Asn Pro Lys
420 425 430

Leu Cys Leu Ser Glu Ile His Lys Met Glu Glu Val Ser Gly Thr Lys
435 440 445

Gly Arg Gln Glu Arg Asn Asp Ile Ala Leu Lys Thr Asn Gly Asp Gln
450 455 460

Ala Ser Cys Glu Asn Glu Leu Leu Lys Phe Ser Tyr Ile Arg Thr Ser
465 470 475 480

Phe Asp Lys Ile Leu Leu Arg Trp Glu Pro Tyr Trp Pro Pro Asp Phe
485 490 495

Arg Asp Leu Leu Gly Phe Met Leu Phe Tyr Lys Glu Ala Pro Tyr Gln
500 505 510

Asn Val Thr Glu Phe Asp Gly Gln Asp Ala Cys Gly Ser Asn Ser Trp
515 520 525

Thr Val Val Asp Ile Asp Pro Pro Leu Arg Ser Asn Asp Pro Lys Ser
530 535 540

Gln Asn His Pro Gly Trp Leu Met Arg Gly Leu Lys Pro Trp Thr Gln
545 550 555 560

Tyr Ala Ile Phe Val Lys Thr Leu Val Thr Phe Ser Asp Glu Arg Arg
565 570 575

Thr Tyr Gly Ala Lys Ser Asp Ile Ile Tyr Val Gln Thr Asp Ala Thr
580 585 590

Asn Pro Ser Val Pro Leu Asp Pro Ile Ser Val Ser Asn Ser Ser Ser
595 600 605

Gln Ile Ile Leu Lys Trp Lys Pro Pro Ser Asp Pro Asn Gly Asn Ile
610 615 620

Thr His Tyr Leu Val Phe Trp Glu Arg Gln Ala Glu Asp Ser Glu Leu
625 630 635 640

Phe Glu Leu Asp Tyr Cys Leu Lys Gly Leu Lys Leu Pro Ser Arg Thr
645 650 655

Trp Ser Pro Pro Phe Glu Ser Glu Asp Ser Gln Lys His Asn Gln Ser
660 665 670

Glu Tyr Glu Asp Ser Ala Gly Glu Cys Cys Ser Cys Pro Lys Thr Asp
675 680 685

Ser Gln Ile Leu Lys Glu Leu Glu Glu Ser Ser Phe Arg Lys Thr Phe
690 695 700

Glu Asp Tyr Leu His Asn Val Val Phe Val Pro Arg Pro Ser Arg Lys
705 710 715 720

Arg Arg Ser Leu Gly Asp Val Gly Asn Val Thr Val Ala Val Pro Thr
725 730 735

Val Ala Ala Phe Pro Asn Thr Ser Ser Thr Ser Val Pro Thr Ser Pro
740 745 750

Glu Glu His Arg Pro Phe Glu Lys Val Val Asn Lys Glu Ser Leu Val
755 760 765

Ile Ser Gly Leu Arg His Phe Thr Gly Tyr Arg Ile Glu Leu Gln Ala
770 775 780

Cys Asn Gln Asp Thr Pro Glu Glu Arg Cys Ser Val Ala Ala Tyr Val

Q D E G S C E D S G P D Q D E G S C E D S G P D

785

790

795

800

Ser Ala Arg Thr Met Pro Glu Ala Lys Ala Asp Asp Ile Val Gly Pro
805 810 815

Val Thr His Glu Ile Phe Glu Asn Asn Val Val His Leu Met Trp Gln
820 825 830

Glu Pro Lys Glu Pro Asn Gly Leu Ile Val Leu Tyr Glu Val Ser Tyr
835 840 845

Arg Arg Tyr Gly Asp Glu Glu Leu His Leu Cys Val Ser Arg Lys His
850 855 860

Phe Ala Leu Glu Arg Gly Cys Arg Leu Arg Gly Leu Ser Pro Gly Asn
865 870 875 880

Tyr Ser Val Arg Ile Arg Ala Thr Ser Leu Ala Gly Asn Gly Ser Trp
885 890 895

Thr Glu Pro Thr Tyr Phe Tyr Val Thr Asp Tyr Leu Asp Val Pro Ser
900 905 910

Asn Ile Ala Lys
915

<210> 13
<211> 895
<212> PRT
<213> Homo sapiens

<400> 13

Met Asn Val Cys Pro Ser Leu Asp Ile Arg Ser Glu Val Ala Glu Leu
1 5 10 15

Arg Gln Leu Glu Asn Cys Ser Val Val Glu Gly His Leu Gln Ile Leu
20 25 30

Leu Met Phe Thr Ala Thr Gly Glu Asp Phe Arg Gly Leu Ser Phe Pro
35 40 45

Arg Leu Thr Gln Val Thr Asp Tyr Leu Leu Leu Phe Arg Val Tyr Gly
50 55 60

1000 900 800 700 600 500 400 300 200 100 0

Leu Glu Ser Leu Arg Asp Leu Phe Pro Asn Leu Ala Val Ile Arg Gly
65 70 75 80

Thr Arg Leu Phe Leu Gly Tyr Ala Leu Val Ile Phe Glu Met Pro His
85 90 95

Leu Arg Asp Val Ala Leu Pro Ala Leu Gly Ala Val Leu Arg Gly Ala
100 105 110

Val Arg Val Glu Lys Asn Gln Glu Leu Cys His Leu Ser Thr Ile Asp
115 120 125

Trp Gly Leu Leu Gln Pro Ala Pro Gly Ala Asn His Ile Val Gly Asn
130 135 140

Lys Leu Gly Glu Glu Cys Ala Asp Val Cys Pro Gly Val Leu Gly Ala
145 150 155 160

Ala Gly Glu Pro Cys Ala Lys Thr Thr Phe Ser Gly His Thr Asp Tyr
165 170 175

Arg Cys Trp Thr Ser Ser His Cys Gln Arg Val Cys Pro Cys Pro His
180 185 190

Gly Met Ala Cys Thr Ala Arg Gly Glu Cys Cys His Thr Glu Cys Leu
195 200 205

Gly Gly Cys Ser Gln Pro Glu Asp Pro Arg Ala Cys Val Ala Cys Arg
210 215 220

His Leu Tyr Phe Gln Gly Ala Cys Leu Trp Ala Cys Pro Pro Gly Thr
225 230 235 240

Tyr Gln Tyr Glu Ser Trp Arg Cys Val Thr Ala Glu Arg Cys Ala Ser
245 250 255

Leu His Ser Val Pro Gly Arg Ala Ser Thr Phe Gly Ile His Gln Gly
260 265 270

Ser Cys Leu Ala Gln Cys Pro Ser Gly Phe Thr Arg Asn Ser Ser Ser
275 280 285

Ile Phe Cys His Lys Cys Glu Gly Leu Cys Pro Lys Glu Cys Lys Val
290 295 300

Gly Thr Lys Thr Ile Asp Ser Ile Gln Ala Ala Gln Asp Leu Val Gly
305 310 315 320

Cys Thr His Val Glu Gly Ser Leu Ile Leu Asn Leu Arg Gln Gly Tyr
325 330 335

Asn Leu Glu Pro Gln Leu Gln His Ser Leu Gly Leu Val Glu Thr Ile
340 345 350

Thr Gly Phe Leu Lys Ile Lys His Ser Phe Ala Leu Val Ser Leu Gly
355 360 365

Phe Phe Lys Asn Leu Lys Leu Ile Arg Gly Asp Ala Met Val Asp Gly
370 375 380

Asn Tyr Thr Leu Tyr Val Leu Asp Asn Gln Asn Leu Gln Gln Leu Gly
385 390 395 400

Ser Trp Val Ala Ala Gly Leu Thr Ile Pro Val Gly Lys Ile Tyr Phe
405 410 415

Ala Phe Asn Pro Arg Leu Cys Leu Glu His Ile Tyr Arg Leu Glu Glu
420 425 430

Val Thr Gly Thr Arg Gly Arg Gln Asn Lys Ala Glu Ile Asn Pro Arg
435 440 445

Thr Asn Gly Asp Arg Ala Ala Cys Gln Thr Arg Thr Leu Arg Phe Val
450 455 460

Ser Asn Val Thr Glu Ala Asp Arg Ile Leu Leu Arg Trp Glu Arg Tyr
465 470 475 480

Glu Pro Leu Glu Ala Arg Asp Leu Leu Ser Phe Ile Val Tyr Tyr Lys
485 490 495

Glu Ser Pro Phe Gln Asn Ala Thr Glu His Val Gly Pro Asp Ala Cys
500 505 510

Gly Thr Gln Ser Trp Asn Leu Leu Asp Val Glu Leu Pro Leu Ser Arg

515

520

525

Thr Gln Glu Pro Gly Val Thr Leu Ala Ser Leu Lys Pro Trp Thr Gln
530 535 540

Tyr Ala Val Phe Val Arg Ala Ile Thr Leu Thr Thr Glu Glu Asp Ser
545 550 555 560

Pro His Gln Gly Ala Gln Ser Pro Ile Val Tyr Leu Arg Thr Leu Pro
565 570 575

Ala Ala Pro Thr Val Pro Gln Asp Val Ile Ser Thr Ser Asn Ser Ser
580 585 590

Ser His Leu Leu Val Arg Trp Lys Pro Pro Thr Gln Arg Asn Gly Asn
595 600 605

Leu Thr Tyr Tyr Leu Val Leu Trp Gln Arg Leu Ala Glu Asp Gly Asp
610 615 620

Leu Tyr Leu Asn Asp Tyr Cys His Arg Gly Leu Arg Leu Pro Thr Ser
625 630 635 640

Asn Asn Asp Pro Arg Phe Asp Gly Glu Asp Gly Asp Pro Glu Ala Glu
645 650 655

Met Glu Ser Asp Cys Cys Pro Cys Gln His Pro Pro Pro Gly Gln Val
660 665 670

Leu Pro Pro Leu Glu Ala Gln Glu Ala Ser Phe Gln Lys Lys Phe Glu
675 680 685

Asn Phe Leu His Asn Ala Ile Thr Ile Pro Ile Ser Pro Trp Lys Val
690 695 700

Thr Ser Ile Asn Lys Ser Pro Gln Arg Asp Ser Gly Arg His Arg Arg
705 710 715 720

Ala Ala Gly Pro Leu Arg Leu Gly Gly Asn Ser Ser Asp Phe Glu Ile
725 730 735

Gln Glu Asp Lys Val Pro Arg Glu Arg Ala Val Leu Ser Gly Leu Arg
740 745 750

His Phe Thr Glu Tyr Arg Ile Asp Ile His Ala Cys Asn His Ala Ala
755 760 765

His Thr Val Gly Cys Ser Ala Ala Thr Phe Val Phe Ala Arg Thr Met
770 775 780

Pro His Arg Glu Ala Asp Gly Ile Pro Gly Lys Val Ala Trp Glu Ala
785 790 795 800

Ser Ser Lys Asn Ser Val Leu Leu Arg Trp Leu Glu Pro Pro Asp Pro
805 810 815

Asn Gly Leu Ile Leu Lys Tyr Glu Ile Lys Tyr Arg Arg Leu Gly Glu
820 825 830

Glu Ala Thr Val Leu Cys Val Ser Arg Leu Arg Tyr Ala Lys Phe Gly
835 840 845

Gly Val His Leu Ala Leu Leu Pro Pro Gly Asn Tyr Ser Ala Arg Val
850 855 860

Arg Ala Thr Ser Leu Ala Gly Asn Gly Ser Trp Thr Asp Ser Val Ala
865 870 875 880

Phe Tyr Ile Leu Gly Pro Glu Glu Asp Ala Gly Gly Leu His
885 890 895

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<211> 68

<212> DNA

<213> Artificial sequence

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<223> Unknown Organism

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tcgacgtc 68

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<212> PRT

<213> Homo sapiens

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Asp	Val	Asp	Asp	Asp	Asp	Lys	Glu	Gln	Lys	Leu	Ile	Ser	Glu	Glu	Asp
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Leu Asn